Space Weather Forecast

Issued on Friday, 14 January 2022 at 00:53 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

Space Weather Forecast Headline: Minor Storm intervals likely, most probably day 2 (15th).

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity was Low in the last 24 hours. Several Common-class flare were observed from the far side, the largest flares around 13/0200 UTC and 13/1200UTC. There are a number of sunspot regions on the Earth-facing side. These are all generally mature and inactive.

No Earth-directed coronal mass ejections (CMEs) have been observed.

Solar Wind / Geomagnetic Activity: Solar winds speeds are currently at background levels around 350 km/s. The total magnetic field strength carried by the wind has remained weak, with no notable strength in the important north-south direction. Geomagnetic activity remained Quiet.
Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) was at background with no solar radiation storms occurring.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is expected to be Low or Very Low. There is an increasing, but still slight chance, of this becoming Moderate from day 2 (15th) as sunspot regions currently on the far side rotate onto the Earth-side.

Solar Wind / Geomagnetic Activity: There are no Earth-directed CMEs. Solar winds are expected to remain Low until the arrival of the fast winds from a coronal hole. This is most likely to occur tomorrow (15th). Quiet geomagnetic activity is expected until this arrival, then becoming Active to Minor Storm as it occurs, with a slight chance of Moderate Storms. Activity then becoming Quiet to Unsettled for days 3 and 4 (16th and 17th), with Active intervals and slight chance of Minor Storms for day 3 (16th).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is forecast to remain at background with no solar radiation storms occurring.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

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Met Office Space Weather Forecast

Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	10	60	40	10
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	10	15	15	15
Very Active	R3 to R5 X	No	1	2	2	2

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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